

SPECIFICATION DATA

for

STRUCTURAL USES

TIDEWATER RED CYPRESS

(Coast-Type)

Adopted

October 1, 1926

Revised

July 1, 1928

HOWARD-TILTON
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Southern Cypress Manufacturers' Association

1223-25 Barnett National
Bank Building
Jacksonville, Florida



301 Poydras Building
New Orleans, Louisiana

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TIDEWATER RED CYPRESS

(Coast Type)

A discussion of the qualities, grades, uses, and relation of grades to uses, together with information as to weight, strength, painting and finishing of this wood as used in building construction.



SOUTHERN CYPRESS MANUFACTURERS' ASSOCIATION

1223-25 Barnett National Bank Building
Jacksonville, Florida

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New Orleans, Louisiana

INTRODUCTION

THIS booklet has been prepared for the use of architects, engineers, builders, and others who use Tidewater Red Cypress. Specific attention has been paid to a brief description of the qualities of the wood, its physical and chemical characteristics, such as weight, strength, decay resistance, etc.; description of the grades and above all, to an analysis of the various uses to which Tidewater Red Cypress can be put, together with a suggested specification for each of such uses.

Particular emphasis has been placed on the correlation between any particular use and the grades of Tidewater Red Cypress recommended for such use. Descriptions of grades of lumber have frequently proven more or less confusing to those who use lumber, largely because the terms used in describing grades are those employed by the manufacturer. We have endeavored in this handbook to explain the significance of the different grades of Tidewater Red Cypress and indicate in as concise a manner as possible how these grades should be used when actually applied in the construction of a building. No attempt has been made to go into detail as to the various virtues of Tidewater Red Cypress because it has been assumed that these qualities are by this time more or less generally recognized. The matter included has been carefully selected, but it is more than probable that there are omissions. Suggestions as to additions or corrections for further editions are, therefore, gladly received.

SOUTHERN CYPRESS MANUFACTURERS' ASS'N

I. GENERAL INFORMATION

1. *Cypress--What it is*

The lumber called Cypress in the United States is a product of the American Bald Cypress (*Taxodium distichum*). The wood is also known as Red, Black, Yellow, and White Cypress; that originating in the tidal swamps of our southeastern and southern coasts being commercially known as * "Tidewater Red Cypress" (Coast Type). The Cypress tree is of very ancient geological lineage and it and its relatives formed the forests of the entire North Temperate Zone of Europe and North America. In those early times, when it was much warmer in these northern countries, the trees grew on the hills and were one of the trees commonly found on the shores of the Mediterranean. With the advent of the Ice Age, Cypress disappeared from many of its former haunts. It, however, left traces in the form of wood now found as fossil wood or more frequently in the form of cones and leaves, so that the geologist is in a position to trace back and determine its former distribution with considerable accuracy. At the present time, the Bald Cypress grows from Virginia, in low lands along the Atlantic coast, around through Florida, westward on the Gulf of Mexico to Texas and up the Mississippi Valley as far as southeast Missouri.

2. *The name "Tidewater Red Cypress" and the Trademark*

Throughout this book, the name "Tidewater Red Cypress" is used for the product manufactured by the responsible mills who are members of the Southern Cypress Manufacturers' Association. This name has been applied so as to distinguish Cypress grown in tidal swamps from that which is found farther inland, in particular to distinguish it from the Cypress found in northern Mississippi, western Kentucky and Tennessee, southeast Missouri and eastern Arkansas. The wood of the trees grown in tidal swamps has certain very definite characteristics. There is a comparatively small ring of sapwood. The trees grow very much

* NOMENCLATURE OF CYPRESS

"The following standard commercial names shall be used in the construction of contracts and in the formulation of lumber-grading rules and the terms of purchase and sale of American standard lumber. Preferred commercial names are shown in black face.

Standard commercial name	Botanical name
Red Cypress (coast type)	<i>Taxodium distichum</i> .
Yellow Cypress (inland type)	<i>Taxodium distichum</i> .
White Cypress (inland type)	<i>Taxodium distichum</i> .

(Quoted from Bulletin 16, U. S. Department of Commerce)

more slowly and consequently make a very much finer textured wood than that grown outside the area above stated. Also, actual experience has shown, from the standpoint of durability, the wood from trees growing close to salt water is far more durable than that from trees grown outside this limit. Tidewater Red Cypress has also frequently been called Red Cypress or Black Cypress to distinguish it from the lighter colored wood of Mississippi, Arkansas, Missouri and Tennessee. This will be shown in detail in the chapter called "Color."

Realizing the superior quality of Tidewater Red Cypress, (Coast Type) manufacturers of this lumber have adopted this arrow  as a trademark for their products, which is applied to all products of their mills. The appearance of the arrow trademark on any piece of Cypress or any bundle of Cypress Shingles may, therefore, be taken as a definite assurance that the wood has been cut from a Cypress tree of the highest quality.

II. QUALITIES OF TIDEWATER RED CYPRESS

1. *Durability*

Tidewater Red Cypress is one of the most durable of American woods. This statement applies specifically to the "heartwood" because the "sapwood" of the Cypress decays under conditions unfavorable to the lasting power of wood quite as readily as does the sapwood of any other tree. The durability of Tidewater Red Cypress is particularly noticeable in places where wood under ordinary circumstances would decay very rapidly, namely, in contact with the ground or when used in moist or humid conditions. Because of this high durability, Tidewater Red Cypress has come to be known as one of the chief woods for out-of-door uses. It is not only durable against decay but it also weathers well.

2. *Color*

Tidewater Red Cypress varies in color from slightly reddish to a deeper red and from this, all the way to almost black. This variation in color has given rise to such names as Red and Black Cypress. To the trees growing outside the tidewater belt, the names White and Yellow Cypress are applied because of the generally lighter color of the wood and as indicating the Inland Type.

The color seems to be an accident of the location in which the tree grows although it is generally true that the darker colored wood is found in what are known as Tidewater Swamps. It may, therefore, be generally stated that the darker colored wood is also usually the wood having the highest lasting power. On account of confusion incident to the application of the color terminology, the color terms have gradually been dropped and the term Tidewater Red Cypress (Coast Type) has been selected as being more nearly indicative of the type of tree which it is desired to describe. The sapwood is usually much lighter in color than the heartwood. Much of the Tidewater Red Cypress is vari-colored, i. e. it is frequently marked by various colored zones, from slightly red to almost black.

3. *Moisture Content*

The moisture content of the wood varies considerably depending again on location. In drying, Tidewater Red Cypress shrinks with considerable uniformity. In rate, it stands about midway between the heavy and light pines. On an average, it may be stated that the shrinkage from absolutely green wood to absolutely air dry wood is about 8% in volume. Wood, air dried, at or near point of manufacture may be taken to have from 12% to 15% of moisture. When kiln dried, the moisture per cent will go as low as 5%. In common with other woods, shrinkage endwise is practically nil. According to Tieman (U. S. Forest Products Laboratory) the following figures indicate the shrinkage from green to oven dry condition, based on dimensions when green, the specific gravity of dry wood as .45 and the weight per M. ft. of kiln dry wood at 5% moisture as 2460 lbs.:

- | | |
|----------------------------|-------|
| a. volume | 11.5% |
| b. edge grain (radial) | 3.8% |
| c. Flat grain (tangential) | 6.0% |

From these figures, it is evident that the radial shrinkage is about one-half of the tangential shrinkage.

4. *Strength*

In strength as in weight, Tidewater Red Cypress is intermediate between heavy and light pines. The following table gives the working stresses advocated by the U. S. Forest Products Laboratory:

WORKING STRESSES FOR TIMBER

Select grade (1) Beams and stringers, posts and square timbers, joists and rafters for use under shelter in dry location. (2)

SPECIES	ALLOWABLE STRESS				Compression parallel to grain—Intermediate columns		Average value for (6) modulus of elasticity
	Bending		Compression perpendicular to grain	Compression parallel to grain	K (5)		
	In extreme fiber (3)	Horizontal shear (4)			Grade		
	Select Grade	Select Grade	All Grades	Select Grade	Common	Select	
	POUNDS PER SQUARE INCH						
Ash, black	1000	90	300	650	26.4	29.5	1,100,000
Ash, commercial white	1400	125	500	1100	23.7	26.5	1,500,000
Aspen and largetooth aspen	800	80	150	700	23.0	25.7	900,000
Basswood	800	80	150	700	23.0	25.7	900,000
Beech	1500	125	500	1200	23.4	26.2	1,600,000
Birch, paper	900	80	200	650	25.2	28.1	1,000,000
Birch, yellow and sweet	1500	125	500	1200	23.4	26.2	1,600,000
Cedar, Alaska	1100	90	250	800	24.8	27.8	1,200,000
Cedar, western red	900	80	200	700	24.2	27.1	1,000,000
Cedar, northern and southern white	750	70	175	550	24.5	27.3	800,000
Cedar, Port Orford	1100	90	250	900	23.4	26.2	1,200,000
Chestnut	950	90	300	800	22.7	25.3	1,000,000
Cottonwood, common and black	800	80	150	700	23.0	25.7	900,000
CYPRESS, BALD (Tidewater Red)	1300	100	350	1100	21.2	23.7	1,200,000
Douglas fir (western Washington and Oregon) (7)	1600	90	345	1175	23.7	27.3	1,600,000
Douglas fir (Rocky Mountain type)	1100	85	275	800	24.8	27.8	1,200,000
Elm, cork	1500	125	500	1200	21.1	23.6	1,300,000
Elm, Slippery and white	1100	100	250	800	24.8	27.8	1,200,000
Fir, balsam	900	70	150	700	24.2	27.1	1,000,000
Fir, commercial white	1100	70	300	700	25.4	28.4	1,100,000
Gum, red, black, and cotton	1100	100	300	800	24.8	27.8	1,200,000
Hemlock, western	1300	75	300	900	25.3	28.3	1,400,000
Hemlock, eastern	1100	70	300	700	25.4	28.4	1,100,000
Hickory, true and pecan)	1900	140	600	1500	22.2	24.8	1,800,000
Larch, western	1200	100	325	1100	22.0	24.6	1,300,000
Maple, sugar and black	1500	125	500	1200	23.4	26.2	1,600,000
Maple, red and silver	1000	100	350	800	23.8	26.6	1,100,000
Oak, commercial red and white	1400	125	500	1000	24.8	27.8	1,500,000
Pine, southern yellow (7)	1600	110	345	1175	23.7	27.3	1,600,000
Pine, white, sugar, western white, western yellow	900	85	250	750	23.4	26.2	1,000,000
Pine, Norway	1100	85	300	800	24.8	27.8	1,200,000
Poplar, yellow	1000	80	250	800	23.8	26.6	1,100,000
Redwood	1200	70	250	1000	22.2	24.8	1,200,000
Spruce, red, white, sitka	1100	85	250	800	24.8	27.8	1,200,000
Spruce, Englemann	750	70	175	600	23.4	26.2	800,000
Sycamore	1100	80	300	800	24.8	27.8	1,200,000
Tamarack (eastern)	1200	95	300	1000	23.1	25.8	1,300,000

- (1) Specifications for the Select and Common grades were published by the Central Committee on Lumber Standards, May 1, 1925. Working stresses for the Common grade of Douglas fir (western Washington and Oregon), and southern yellow pine are 75 per cent of those given for the Select grade; for other species 80 per cent of the Select grade, except in compression perpendicular to grain and modulus of elasticity which are the same for all grades. The difference in the percentage between the Select and Common grades of Douglas fir and southern yellow pine as compared with other species is due to the fact that the rate of growth requirement for the Select yellow pine as compared with other species is due to the fact that the rate of growth requirement for the Select grade applies only to these two species.
- (2) The stresses for timbers used "outside, not in contact with the soil," and in "damp or wet locations" range from 12½ to 33 per cent lower than the bending and compression stresses recommended above, which are for use in dry locations.
- (3) Stress in tension along the grain. The stresses in extreme fiber in bending are identical with those recommended for tension parallel to grain.
- (4) Shearing stress for joint details. The shearing stress for joint details for all grades may be taken as 50 per cent greater than the horizontal shear values in the table.
- (5) K is for use in Table 3 for determining the safe unit stress for columns of intermediate length. It is the L/d at which the F. P. L. fourth power parabola becomes tangent to the Euler curve.
- (6) Values for modulus of elasticity are average for species. In figuring safe loads for long columns a factor of 3 must be applied to them.
- (7) If material of either grade of southern yellow pine or Douglas fir conforms to the density requirements of the American Society for Testing Materials the stresses in compression (both parallel and perpendicular to grain), in extreme fiber, in bending and in horizontal shear may be increased by 10 per cent of the value listed for the Select grade.

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
FOREST PRODUCTS LABORATORY
MADISON, WISCONSIN
(Revised) JANUARY 20, 1926

5. *Weight*

Tidewater Red Cypress is one of the lighter woods. When green it will weigh from 50 to 60 lbs. per cu. ft.; when thoroughly air dry, about $28\frac{1}{2}$ lbs. per cu. ft. Its specific gravity varies from 0.35 to 0.60, or an average of about 0.45 for air dry wood. These figures should be taken as broad averages because the trees will vary as to weight depending on the rate of growth and region in which they are found.

6. *Other Physical Qualities*

From the builders' standpoint, other physical qualities of Tidewater Red Cypress worthy of mention are its ease of working, freedom from splitting when carefully dried and good nail holding power.

Tidewater Red Cypress has very few defects other than knots and occasional worm holes. With the exception of the pecky disease, which is referred to in the next chapter, cypress has no other known disease defect. It is, therefore, a wood which can be counted on to have a very high percentage of more or less flawless boards or timbers.

7. *Pecky Cypress*

Pecky cypress is the term applied to boards or timbers having a peculiar disease common to the heartwood of many Cypress trees. On the cross section, the board appears to be full of holes and on the surface, looks as if it had been gouged. Curiously enough, this is a defect only in the sense of appearance and strength and its durability is as great as that of the sound wood.

The Pecky disease in no way detracts from the usefulness of Tidewater Red Cypress in places where exposure and not strength is the prime requirement, as in foundations and sills. At the present time, Pecky Cypress is in very great demand for interior trim because of its antique appearance and the picturesque effects to be secured from such use.

8. *Heart and Sap*

As with all the other woods, Tidewater Red Cypress lumber may be either heartwood, sapwood or part heart or part sapwood. As has already been indicated, the sapwood, while just as strong and partaking of all the other good qualities of Tidewater Red Cypress, should not be expected to have great durability. It is generally recommended and used for interior purposes. Where great durability is desired, practically all-heart or all-heart grades should be specified.

III. USES

Introduction

In the following chapter, the various uses to which Tidewater Red Cypress is adapted have been enumerated, together with suggestions for grades of Tidewater Red Cypress fitted for such uses and for each such class, suggested specifications for the particular use are added.

The uses have been classified into two general groups—outside uses and interior uses. In each individual group, the kind of Cypress suggested for any particular use is referred to by its grade name. The actual description of the grade will be found in Appendix 1, page 21, and in attached copy of "Standard Grades and Classifications of Cypress Lumber and Shingles." Where it is desirable to write a specification with complete description of grade rather than its name, the grade descriptions should be added to the name.

For the sake of ready reference the uses of cypress have been grouped under the following heads:

1. Structural timbers and rough carpentry. (*Page 8*).
2. Shingles. (*Page 10*).
3. Siding. (*Page 11*).
4. Exterior millwork. (*Page 12*).
5. Flooring for outside use. (*Page 14*).
6. Interior millwork. (*Page 14*).
7. Flooring for interior use. (*Page 9*).

Attention is also called to the fact that in a number of chapters, more than one grade is frequently given. In explanation hereof, it should be noted that where more than one grade is specified, the architect or user should choose from the grades made optional with the realization that several grades are possible, depending on the question of taste, serviceability, and cost. The grades are so written that a little study will quickly determine which one particular grade is best adapted for the purpose in mind.

TIMBERS

(a) Grade of Lumber

All of the lumber of the various kinds and grades called for by the following specifications shall be thoroughly seasoned and commercially dry conforming to American Lumber Standards.

All framing lumber shall be full and square to the standard

dimensions indicated and shall be free from defects foreign to the respective grades and impairing the durability or strength.

(b) *Basement Posts*

Basement posts shall be No. 1 Common Tidewater Red Cypress timbers of sizes indicated on plans. All posts shall be straight and true, and bearing surfaces shall be squared perpendicular to the axis.

(c) *Beams and Lintels*

All wood beams over unexcavated portions or where exposed to moisture, and all wood lintels and wood beams built into masonry shall be No. 1 Common Tidewater Red Cypress timbers of sizes indicated. All timbers shall be straight and true.

The bearing of all girders and beams shall rest on flat plates which shall be anchored to masonry walls. All girders and beams shall have wall ends fire cut. Where beams frame opposite, strap anchors shall be used to tie the beams securely together.

Note: If wooden beams or lintels are used to support masonry walls, relieving arches should be constructed in order that masonry will be self-supporting in case of shrinkage in wood members.

(d) *Wall Plates*

All wall plates shall be No. 1 or No. 2 Common Tidewater Red Cypress of sizes indicated, leveled and securely fastened with anchor bolts left in walls by the Masonry Contractor.

(e) *Sheathing*

The exterior frame wall surface, all roof surfaces, and all exterior dormer surfaces, box gutters, saddles, troughs, etc., shall be lined with 1 x 6" or 1 x 8", 1 x 10" or 1 x 12", dressed and matched or ship lap No. 1 Common Tidewater Red Cypress boards, laid close, fitted up tight with joints broken and all securely nailed to their bearings.

Note: Where economy is a deciding factor No. 2 common or No. 3 common grades might be appropriately specified for this purpose.

(f) *Rough Floors*

All wood floor joists shall be lined with under floors of 1 x 6" or 1 x 8" No. 2 Common or No. 3 Common Tidewater Red Cypress

boards, surfaced one side, laid close and securely nailed to every bearing. After the partitions are set and plastering finished, floors shall be swept clean and all places patched where rough flooring may have been taken up.

The rough flooring shall be carried through between studding to sheathing on outside walls at second and third floors of house.

SHINGLES

Tidewater Red Cypress is peculiarly adapted to shingles. They have extraordinary durability. They possess the added virtues of having more wood in them and of weighing more than any other shingle now on the market. They are sold as dimension shingles as well as in random widths and are always full count, 4,000 lineal inches to constitute 1000 shingles.

(a) *Stock Grades*

"BESTS"—A dimension shingle 4", 5" and 6" in width, 16" long, each width packed separately, 5 butts to measure 2" when dry. Shingles are all heartwood and free from defects.

"PRIMES"—Same as "Bests" except that sap and sound knots 8 inches or more from butt are admitted.

"STAR-A-STAR"—A random width Shingle 3 inches and wider, 14 to 16 inches long, otherwise same as "Primes."

"ECONOMY"—A dimension shingle 4", 5" and 6" in width, 14" to 16" long, admitting sap and sound knots, slight peck 5 inches from butt, and imperfections on points.

"CLIPPERS"—A dimension shingle 4", 5" and 6" in width or in random widths 2½" and wider, admitting all shingles below the above grades which are sound for 5 inches from the butts except for worm holes and slight peck.

SPECIFICATIONS

(b) *Shingle Roofs*

All pitched roof surfaces shall be covered with grade Tidewater Red Cypress sawed shingles, 5/2 by 16 inches long by not to exceed 6 inches wide laid 4½ inches to the weather. Shingles wider than 6" shall be split to the narrower widths before laying. Roof sheathing shall be "open" construction consisting of 1 x 6" No. 2 Common or No. 3 Common Tidewater Red Cypress boards spaced 9 inches on center.

Shingles shall be well nailed with galvanized iron or zinc cut nails, with all joints broken and no nail heads exposed. Ridge rolls shall be of metal and valleys shall be closed with metal valleys furnished by the sheet metal contractor.

Shingles shall be three-quarter dipped in creosote shingle stain by the painter before laying. If it is desired to have the shingles weather naturally, no dipping or other treatment will be required.

(c) *Shingle Siding*

All exterior frame wall surfaces and dormer surfaces shall be lined with Tidewater Red Cypress sawed shingles, 5/2 by 16 inches long by not to exceed 8 inches wide, laid . . inches to the weather. Shingles shall be laid with joints broken, carefully fitted at angles and openings, and each shingle well nailed with zinc cut nails.

The shingles shall be three-quarter dipped in creosote stain by the painter before laying.

S I D I N G

(a) *Bevel Siding*

THICKNESSES: 7/16" and 1/2" by 3/16".

WIDTHS: 4", 5", and 6".

LENGTHS: 8', 9', and 10' to 20' in multiples of 2'.

GRADES: A, B, C, and D, and in 4' to 7' lengths, C and Better, all graded from the finished side. B and lower grades will admit any amount of bright sapwood.

A SIDING will admit 1" of bright sapwood on thin edge, and one small sound knot.

B SIDING will admit three small sound knots or a few pin wormholes, and slight wane on the thin edge. In the absence of other defects light stain will be admitted.

C SIDING will admit one medium knot or four small sound knots or a few pin worm holes well scattered over the piece, and sound stain.

D SIDING will admit more and coarser defects than C Siding, but none that will prevent the use of each piece in its full length.

NOTE: Bevel Siding may also be had in D and No. 1 Common Grades for cheaper construction.

(b) *Bungalow Siding*

THICKNESS, 7/16" and 1/2"x3/16", 9/16"x3/16", and 11/16" 3/16".

WIDTHS: 8", 10", and 12".

LENGTHS: 8', 9', and 10' to 20' in multiples of 2'.

BUNGALOW SIDING shall be worked and graded under the

rules for Bevel Siding, except that A Grade will admit 2" of bright sapwood.

(c) *Drop Siding*

THICKNESS 3/4".

WIDTHS: 4", and 6".

LENGTHS: 8', 9', and 10' to 20' in multiples of 2'.

GRADES: A, B, C, and D, all graded from the finished side, or if both sides are finished, from the better side. B and lower grades will admit any amount of bright sapwood. Graded under rules for Flooring. (See page 14).

SPECIFICATIONS

All exterior frame walls shall be covered with grade Tidewater Red Cypress (bungalow, bevel or drop) siding inches wide by . . inches thick, laid . . inches to the weather. All pieces shall be in standard lengths as specified in grading rules. All siding shall be well nailed to every bearing and nail heads set. Joints shall be broken and corners mitred, all carefully fitted.

EXTERIOR MILLWORK

SPECIFICATIONS

(a) *Material & Workmanship*

All exterior woodwork, unless otherwise specified, shall be constructed of * Grade Tidewater Red Cypress of dry, well seasoned stock.

All exterior woodwork shall have close fitting and white leaded joints and will be stained or primed all over by the painter before being put in place.

All millwork material shall be finished with clean cut angles and straight line, cleaned and smoothed by hand before assembling and again after assembling. All exposed edges shall be "deadened."

(b) *Window & Door Frames*

Wood frames shall be provided for all exterior door and window openings throughout, all set plumb and true and securely spiked in place with nail holes concealed under lining woodwork. The frames shall be made for fixed, casement and double hung sash as indicated.

All frames for double hung windows unless otherwise detailed shall have rabbeted box frame constructed with 1 1/8" pulley stiles

* See Appendix I Page 21

and $1\frac{1}{8}$ " outside casings, $\frac{1}{2}$ " parting strips, $\frac{7}{8}$ " backs and inside casings, dividing partitions full height of pulley boxes, moulded staff beads, mullions and transoms, $1\frac{3}{4}$ " rabbeted and curfed sills.

All wood frames for exterior doors and wood casement, pivoted, and fixed sash shall be constructed with $1\frac{3}{4}$ " frames rabbeted for both sash and screens, curfed as detailed with moulded staff beads and with mullions and transoms where indicated.

(c) *Exterior Cornice*

Lookouts shall be cut as per profile and shall be securely spiked to roof framing and run exposed in the eaves as indicated on drawings. A closure mould of detail shown shall cover joining with wall.

The projection of roof over exposed rafters shall be covered with $13/16$ " x $3\frac{1}{4}$ " matched and "V" jointed * grade Tidewater Red Cypress ceiling, joints broken and blind nailed.

(d) *Half Timber Work*

All half timber work shall be of * grade Tidewater Red Cypress $1\frac{1}{8}$ " thickness by widths shown with hand hewn surface and edges, wood pins and joints as detailed all tightly fitted with leaded jointings. Over the wall sheathing and building paper shall be placed 1" x 2" strips as blocking under all half timber work and with vertical strips in the panels not over 12" o. c. On these strips will be placed wire lath fabric by Lathing and Plastering Contractor, then the half timber in paneling shown by the Carpenter Contractor.

(e) *Porch Ceilings*

The ceilings of all porches shall be covered with $13/16$ " x $3\frac{1}{4}$ " matched and "V" jointed (A, B or C) Grade Tidewater Red Cypress ceiling for (stained or painted) finish, joints broken and securely blind nailed. A mould shall be run around ceiling.

(f) *Shutters*

The shutter blinds shown on drawings shall be substantially built up of (A or B) grade Tidewater Red Cypress with $1\frac{1}{8}$ " thick stiles and rails and . . inch thick solid panels (or slats) in accordance with details.

* See Appendix I Page 21

FLOORING

(a) *Stock Grades*

In specified widths from 3", 4", 5" and 6" stock, 1" to 2" thick, lengths same as siding.

"A" *Flooring*—All heart wood with face side free from all defects.

"B" *Flooring*—Admits bright sap and two small sound knots.

"C" *Flooring*—Admits one to five sound knots, the whole not aggregating over 3" in diameter, sound stain, and a few pin worm holes or other defects that will not prevent the use of each piece in its full length.

"D" *Flooring*—Admits more numerous defects than "C" Flooring, but defects shall not cause waste.

SPECIFICATIONS

(b) *Porch Floors*

Porch flooring shall be "A" grade Tidewater Red Cypress flooring 13/16" or 1 1/16" x 2 1/4". The flooring shall be laid level and true, driven close up and securely blind nailed at each bearing. As each piece is laid the joint shall be thoroughly coated with heavy mixture of white lead and oil.

INTERIOR MILLWORK

SPECIFICATIONS

(a) *Interior Woodwork*

All wood for interior trim shall be * grade Tidewater Red Cypress for (stained or painted) finish. All material shall be free from defects foreign to the grades specified and shall be piled and air dried for at least one year before kiln drying. After air drying it shall be thoroughly kiln dried.

(b) *Trim*

The baseboards, picture moulds, and architraves around all door and window openings shall be moulded as shown on scale and full sized details.

All casings shall be fitted and nailed together at the building by skilled mechanics. The flat part of the casing shall be coped and the moulded part mitered.

All picture moulds shall be securely nailed to grounds, coped at corners and mitered at angles.

* See Appendix I Page 21

(c) *Cornices and Beams*

All cornices shall be built up of solid stock with members tongued together and mouldings applied. All wood beams shall be fitted with mouldings producing the same sections as the cornices in connection with which they occur.

All wood beams and cornices shall be blocked on the back and set true to line and level with all joints closed. Intersections of mouldings in re-entrant angles shall be coped. Internal intersections shall be mitered.

(d) *Wood Sash*

All wood sash shall be $1\frac{3}{4}$ " thick, unless otherwise indicated and all substantially manufactured as per details. Sash shall be of select "A" grade Tidewater Red Cypress, carefully fitted, perfectly balanced and made to move easily throughout. Wood muntins shall be provided where indicated.

All sash shall be mortised and tenoned, blind framed, glued and pinned and rabbeted for glass with sticking as detailed.

All casement and fixed sash shall be fitted at the bottom with wood drips let into the bottom rails, set in white lead and well nailed. Double casement sash shall have rabbeted meeting stiles and astragals.

(e) *Panels*

All panels for doors and wainscoting shall be Solid of inch thickness either raised or flat panels as specified.

(f) *Wood Doors*

Exterior doors shall be single thickness, All Heart Grade Tidewater Red Cypress, all as per details. Main entrance doors shall be $2\frac{3}{4}$ " and service entrance doors $1\frac{3}{4}$ " thick.

Interior doors shall be single thickness, B & Better Grade Tidewater Red Cypress. Stiles and rails shall be largely heart wood admitting small amount of sap. Solid Moulding on stiles and rails. Solid panels of . . inch thickness, either raised or flat panels as specified.

Doors indicated as glazed, shall be provided with rabbet to receive glass and fitted with muntins and glazing beads as per details.

Exterior double doors shall have astragals. Interior double doors, except double swing doors, shall have beveled meeting stiles in place of astragals.

Unless otherwise shown in details, all interior doors 2' 6" wide and wider shall be $1\frac{3}{4}$ " thick and all doors less than 2' 6" wide shall be $1\frac{3}{8}$ " thick. All doors shall be fitted with a $1/16$ " clearance at the sides and tops and a $1/8$ " clearance at the bottom.

(g) Wainscoting and Paneling

Panel wainscot of * grade Tidewater Red Cypress shall be provided as shown on detailed drawings.

All stiles and rails for paneled work shall be at least $13/16$ " thickness of solid stock framed together, wedged and glued. Intermediate stiles or muntins shall be glued into the panel groove in the top and bottom rails. All stiles and rails shall be grooved for panels and no panels shall be fastened. All panel moulds shall be in the solid or set on splines set into the stiles and rails, and care shall be taken not to nail panel mould to wall. All wood wainscoting shall have moulded cap and base as indicated.

Each section of paneled wainscoting shall be built up and completely put together before delivery to the building, except for the application of such mouldings as may be used to cover fastenings. All fastenings shall be concealed. All external angles in wainscoting shall have mitered joints and shall be reinforced on the backs with glued blocks or small iron knees screw fastened.

IV. PAINTING AND FINISHING

Painting

For both exterior and interior work Tidewater Red Cypress can be painted without special preparation and with complete satisfaction.

NOTE: Attention is directed to the Study and Tests in Painting Cypress and other woods by the Section of Wood Preservation, U. S. Forest Products Laboratory, Madison, Wis. Results will be supplied upon application.

Natural Finish

But as the charm of modern architecture is in the use of the natural wood, Tidewater Red Cypress, on account of the beauty of its grain and variety of its rich shadings, should be varnished and finished in the natural.

* See Appendix I Page 21

Stained Finish

Tidewater Red Cypress can also be stained with great success. In imitation of mahogany—becoming even more beautiful than mahogany itself—of cherry, black walnut, the different oaks; or tinted any desired shade the most fastidious fancy may suggest.

“Sugi” Finish

One of the most modern and interesting developments of Tidewater Red Cypress for interior finish is achieved by the Japanese treatment, known as “Sugi.” It reproduces with remarkable accuracy the historic and highly artistic “driftwood effect.”

“Sugi” finish imitates the famous and greatly coveted finish “without waiting for decades of erosion.” It can be done by any one who can wield an ordinary gasoline torch (such as is used by plumbers), and who then has the patience (and good taste) to brush out the charred portion of this peculiar wood. The “Sugi” finish has been tried on other woods, but without success. Its cost is slight. The freedom of Tidewater Red Cypress from the resinous quality of most woods renders it adaptable to this extraordinary handling. There is practically no limit to the utilization of Tidewater Red Cypress for this purpose.

“Sand-blasted” Finish

This finish is obtained by treating Tidewater Red Cypress to a sand blasting process which brings out the unusual beauty of the grain. A thin stain is then applied and the wood is waxed when dry. The result obtained is somewhat similar to the “Sugi” process but the treatment is not hard on the wood and there is no warping or twisting. This finish is unusually beautiful and is being used with highly satisfactory results.

Pecky Cypress

Pecky Cypress is now being extensively used for interior trim where antique appearance and picturesque effects are desired. A special pamphlet and instructions for painting and finishing are available on request to the office of this Association.

SPECIFICATIONS

(a) Workmanship

All material shall be applied in thoroughly first class manner by skilled workmen. All varnish, paint and enamel shall be evenly and smoothly flowed on leaving no superfluous material, sags or

runs. All coats of whatever description shall be laid on, crossed and laid off evenly so as to show no brush marks. No paint or varnish shall be applied to damp surfaces and in no case until the preceding coat is hard dry.

(b) *Exterior Painted Finish*

All exposed exterior woodwork shall receive priming coat and two coats of white lead and oil paint in color selected.

Priming Coat. Before priming coat is applied, all knots, pitch pockets or sappy portions shall be brush coated with turpentine.

Priming coat shall be the white lead paint specified, thinned with one quart of benzol to the gallon of paint. When benzol is not available turpentine in the same proportion can be used. All woodwork which is built into masonry shall be back-primed and allowed to become thoroughly dry before setting in place.

After priming coat is thoroughly dry, all nail holes, cracks and defects shall be carefully filled with putty composed of equal parts of pure dry whiting, and pure white lead, and enough linseed oil and Japanese drier to produce a working consistency and proper drying qualities.

Finishing Coats. Second and finishing coats shall be composed of pure carbonate of lead, zinc oxide, and pure raw linseed oil with colors ground in oil, thoroughly mixed, and well strained. Proportions shall be as follows:

White lead	- - - - -	75 lbs.
Zinc oxide	- - - - -	25 lbs.
Raw Linseed Oil	- - - - -	3½ to 4½ gallons
Pure Turpentine	- - - - -	¼ gallon
Turpentine Drier	- - - - -	1 pint

(Ready mixed paint of approved manufacture may be substituted for white lead, and oil paint at Architect's discretion.) Each coat shall be hard dry before succeeding coat is applied.

(c) *Exterior Stained Finish*

All exterior woodwork except sash and doors shall be finished with two brush coats of approved Creosote Stain, full strength in color selected. The first coat shall be applied before trim is put in place and shall be allowed to dry for at least two weeks before the second coat is applied.

Creosote Stain shall not be used for sash or doors which shall be finished with paint or oil stain.

(d) Staining Shingles

The wood shingles shall be coated with approved Creosote Stain full strength, in color selected.

The shingles shall be dipped three-quarters the length and shall then be given one (1) brush coat after laying, care being taken that the shingles are perfectly dry before dipping.

(e) Interior Stained Finish

All interior trim shall be finished with one coat of oil (or acid) stain, one coat of gloss varnish, and one coat of dull varnish, all as hereinafter specified. Sandpaper slightly between coats with No. 00 sandpaper and rub final coat with pumice stone and oil.

Preparation. All nail holes, cracks and defects shall be carefully filled with colored putty and all knot holes, pitch pockets or sappy portions shall be sealed with shellac. All raised grain shall be sanded smooth. Where water or acid stain is specified, a brush coat of water shall be applied to raise the grain and surface shall be then sanded smooth before the stain is applied. The backs of all interior woodwork shall receive priming coat of white lead and oil paint as specified for exterior woodwork.

Staining. All stains used for woodwork shall be of oil or acid stains as specified warranted not to bleach or turn color and of high-grade manufacture.

All exposed surfaces of woodwork to be stained shall be colored by a uniform application of stain equalized where necessary. The stain shall be worked back of panel moulds as far as possible, and the excess stain shall be wiped off with cotton waste.

Varnish and Rubbing. All varnish shall be the best architectural grade as approved by architect, and applied as herein specified.

Rubbing of finish coat shall be done with powdered pumice stone and rubbing oil with such care that all surfaces shall be of a uniform dull gloss. All pumice stone shall be thoroughly cleaned from all surfaces and the finish then oiled with a mixture of mineral oil and benzine rubbed absolutely dry.

Wood window stools, entrance doors and trim, and other varnished surfaces exposed to weather shall receive Spar varnish in at least four coats and last coat rubbed.

NOTE: For *Natural finish*, substitute a thin coat of white

shellac for the stain and then the varnish shall be applied as above specified.

For *waxed finish* one coat of white shellac shall be applied over stain, lightly sandpapered and then two coats of approved wax, rubbed and polished.

(f) Interior Enamel Finish

All interior woodwork shall receive four-coat enamel work in accordance with the following specifications.

Preparation. Before priming coat is applied, all knots, pitch pockets, or sappy portions shall be brush coated with turpentine. Priming coat shall consist of enamel undercoating or interior white as it comes in the can, applied to back as well as to exposed surfaces of all woodwork. After priming coat is thoroughly dry, all nail holes and defects shall be carefully puttied.

Second coat shall be same material as priming coat.

Third coat shall be same material and enamel mixed in equal parts.

Last coat shall be enamel with no admixture.

Forty-eight hours shall be allowed for drying and hardening between coats and each coat except last shall be lightly sandpapered with No. 00 sandpaper, care being taken not to rub off the edges.

Finish of all enamel shall be eggshell finish in tints selected.

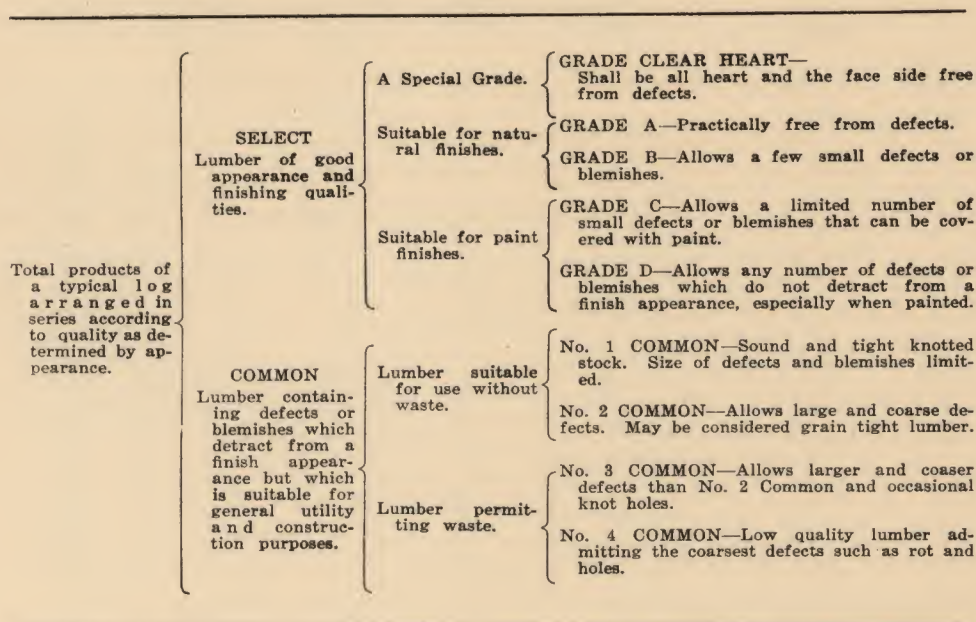
APPENDIX I

SUMMARY OF GRADING RULES FOR TIDEWATER RED CYPRESS

These have been developed after many years of practice. They describe as accurately as can be done various types of Tidewater Red Cypress Lumber. The basis for the rules can, perhaps, be best illustrated by using the diagram recently adopted by the American Lumber Standards, drawn up under the auspices of the U. S. Department of Commerce.

DIAGRAMMATIC SUMMARY

Showing relationship of various Cypress Yard Grades to each other



Copy of Standard Grades and Classifications of Cypress Lumber Shingles is sent with this book. Additional copies may be secured upon application.

APPENDIX II

SUMMARY OF STANDARD AND EXTRA STANDARD SIZES FOR YARD LUMBER S1S OR S2S, AND/OR S1E OR S2E TIDEWATER RED CYPRESS

FINISH, COMMON BOARDS, and DIMENSION

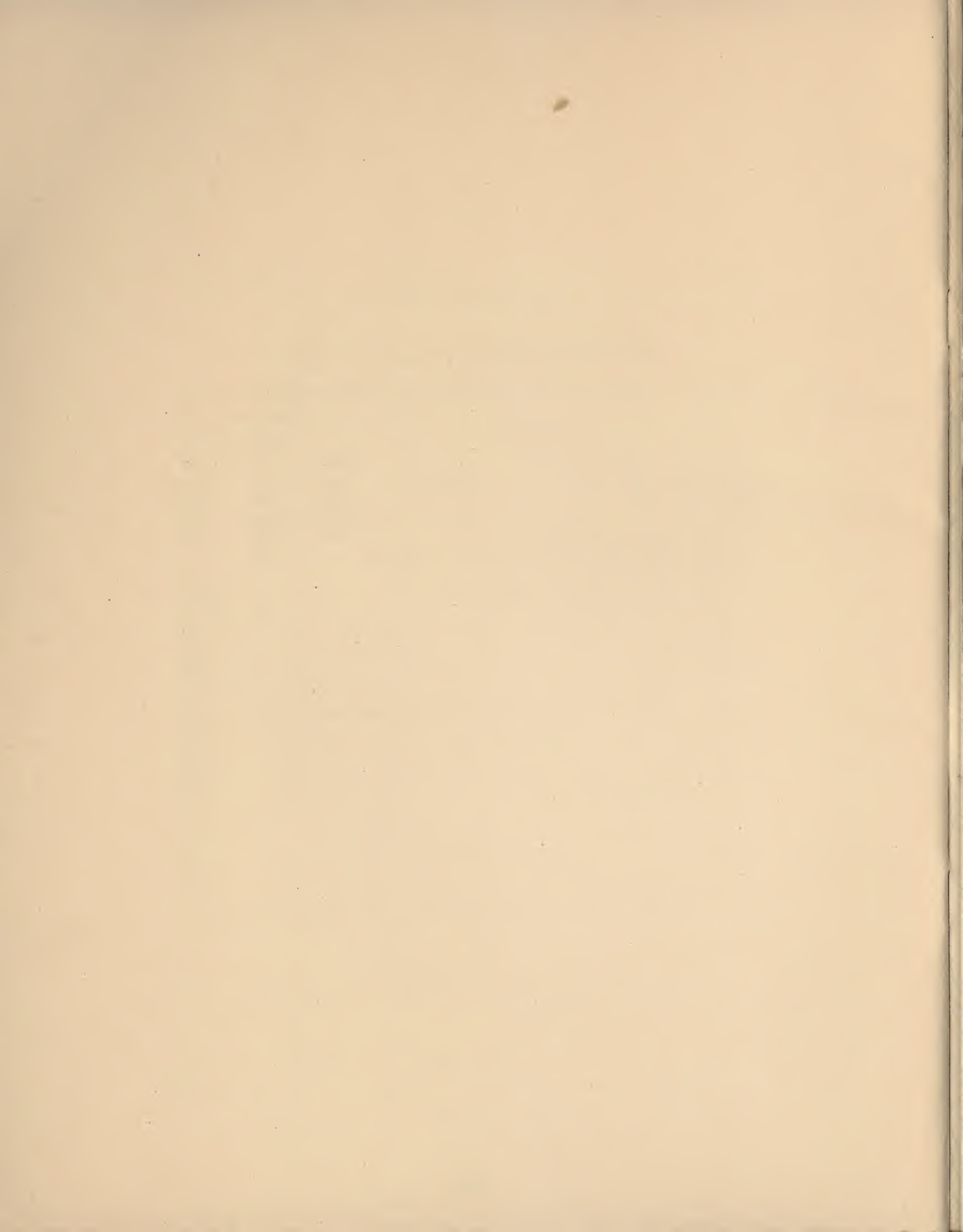
(The thicknesses apply to all widths and the widths to all thicknesses)

PRODUCT	SIZE, BOARD MEASURE		Dressed dimensions at commercially dry shipping weight and moisture content.		
	Thickness Inches	Width Inches	Thickness Standard Yard Inches	Thickness Standard Industrial Inches	Inches Width
Finish		3	5/16		2 5/8
		4	7/16		3 5/8
		5	9/16		4 5/8
		6	11/16		5 5/8
	1	7	25/32	26/32	6 5/8
	1 1/4	8	1 1/16		7 1/2
	1 1/2	9	1 5/16		8 1/2
	1 3/4	10	1 7/16		9 1/2
	2	11	1 5/8	1 6/8	10 1/2
	2 1/2	12	2 1/8		11 1/2
	3	over 12	2 5/8		off 1/2
Common Boards	1	3	25/32	26/32	2 5/8
	1 1/4	4	1 1/16		3 5/8
	1 1/2	5	1 5/16		4 5/8
		6			5 5/8
		7			6 5/8
		8			7 1/2
		9			8 1/2
		10			9 1/2
		11			10 1/2
		12			11 1/2
		over 12			off 5/8
Dimension	2	2	1 5/8	1 6/8	1 5/8
	2 1/2	4	2 1/8		3 5/8
	3	6	2 5/8		5 5/8
	4	8	3 5/8		7 1/2
	over 4	10	off 3/8		9 1/2
		12			11 1/2

APPENDIX III

WEIGHTS OF TIDEWATER RED CYPRESS

	Pounds per M. S1S		
	Green	Rough or S2S	
		Dry	Dry
Lumber 4"	5,000	3,500	3,200
Lumber 2½" and 3"	5,000	3,500	2,900
Lumber 2"	5,000	3,200	2,600
Lumber, 1½", 1¼" and 1"	5,000	3,000	2,400
1" Lumber, Rough, Re-sawed		2,800	
1" Lumber, Rough, Re-sawed twice		2,700	
1" Lumber, S2S and Re-sawed			2,250
1" Lumber, Re-sawed and S2S afterwards			2,000
2" Lumber, Rough, Re-sawed twice		2,800	
¾" Panel Stock			800
½" Panel Stock			1,000
⅝" Panel Stock			1,400
¾" Panel Stock			1,600
Worked Flooring, Partition, Drop Siding, Shiplap, Moulded Casing and Base			2,200
⅝" Ceiling			1,600
½" Ceiling			1,300
⅝" Ceiling			1,000
½" Bevel Siding			1,000
⅝" Bungalow Siding (from 5/4")			1,400
¾" Bungalow Siding (from 6/4")			1,850
Shingles, all grades			300
Lath, ⅝"			500
Lath, ⅝"			900
Byrkit's Sheathing Lath			1,500



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